


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) Process for the hydrogenation of phenyl acetylene in a styrene-containing liquid medium with the aid of a catalyst and in the presence of hydrogen gas, wherein the catalyst is a sulfur-free nickel catalyst with a nickel content of 10-25 wt.%, supported on a carrier material and wherein the hydrogenation is carried out at a temperature between about 15 and about 50 °C and an hydrogen pressure between 1 and 301 bar.
2. (Previously amended) Process according to claim 1, wherein the nickel content of the catalyst is 11-25 wt. %.
3. (Previously amended) Process according to claim 1, wherein the carrier material is θ - or γ -alumina.
4. (Previously amended) Process according to claim 1, wherein the catalyst is a fixed-bed catalyst with which the styrene-containing medium and the hydrogen gas are contacted.
5. (Previously amended) Process according to claim 1, wherein the styrene-containing medium and the hydrogen gas are supplied at the bottom of a reactor.
6. (Previously amended) Process according to claim 1, wherein the hydrogen gas/phenyl acetylene molar ratio is 1-4.
7. (Previously amended) Process according to claim 1, wherein the phenyl acetylene content of the styrene-containing medium is 0.01-5 wt.%.
8. (Canceled)
9. (Previously amended) Process according to claim 1, wherein hydrogenation is carried out at an LHSV between 0.1 and 100 per hour.

10. (Previously amended) Process according to claim 1, wherein hydrogenation is carried out at an LHSV between 0.1 and 10 per hour.
11. (Previously amended) Process according to claim 1, wherein the styrene-containing medium contains ≥ 30 wt. % of styrene.
12. (Previously amended) Process according to claim 1, wherein the styrene-containing medium is a C8 hydrocarbon fraction containing ≥ 30 wt. % of styrene.
13. (Previously amended) Process according to claim 1, wherein the catalyst further comprises chromium, gold, rhodium or ruthenium.
14. (Previously amended) Process according to claim 1, which further comprises carrying out the hydrogenation reaction for up to about 100 days without regeneration of the catalyst.
15. (Previously amended) Process according to claim 1, which further comprises regenerating the catalyst after it becomes contaminated resulting in a decline in hydrogenation activity.
16. (Previously amended) Process according to claim 15, wherein said regenerating comprises treating the contaminated catalyst with steam and air at an elevated temperature, followed by reduction with hydrogen at the elevated temperature.
17. (Previously amended) Process according to claim 1, wherein the amount of phenyl acetylene in the styrene-containing medium following hydrogenation, is less than about 100 ppm.
18. (Previously amended) Process according to claim 1, wherein the amount of phenyl acetylene in the styrene-containing medium following hydrogenation, is less than about 10 ppm.

19. (Previously amended) Process according to claim 1, which further comprises carrying out the hydrogenation reaction for up to about 220 days without regeneration of the catalyst.

 20. (Previously amended) Process according to claim 1, wherein the hydrogen gas/phenyl acetylene molar ratio is 1-10.
